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U. S. DEPARTMENT OF AGRICULTURE
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INFORMATION FOR APPLICANTS FOR FEDERAL MEAT INSPECTION

By the Federal Meat Inspection Service

The Federal meat inspection service is administered by the Meat Inspection Division of the Livestock and Meats Branch, Office of Marketing Services. The administrative offices are in Washington, D. C.

The purpose of the Federal Meat Inspection Act approved March 4, 1907, is stated in the Act as:

". . . for the purpose of preventing the use in interstate or foreign commerce . . . , of meat and meat food products which are unsound, unhealthful, unwholesome, or otherwise unfit for human food"

The Act is intended to assure a healthful and wholesome meat supply. Nevertheless, it is important to note the "interstate or foreign commerce" provision for the reason that, except as hereinafter noted, inspection under the Act cannot be established or maintained at a slaughtering or meat processing plant at which no meat or meat food product is prepared for the channels of interstate or foreign commerce. However, if inspection is maintained at a plant, the entire production of the plant is subject to inspection regardless of the proportion shipped in interstate or foreign trade. A plant operated under Federal meat inspection is designated as an official establishment.

Under an Act of Congress approved June 10, 1942, inspection may be granted at slaughtering or meat processing establishments engaged only in intrastate commerce in order that the products prepared therein may be eligible for sale to Federal agencies. When inspection is granted under the terms of this Act, all provisions of the meat inspection law and regulations are applicable. However, inspection granted at such plants terminates automatically not later than 6 months following the end of the present war.

The Act of 1907 applies only to cattle (including calves), sheep, swine, and goats, and the edible products derived from their carcasses. Its provisions are, however, extended to horses by the Horse-Meat Act. Wild animals, poultry, fish, and game are not subject to its provisions. Food products derived from such species are subject to State laws and local ordinances, and, if shipped in interstate or foreign commerce, are subject also to the provisions of the Food, Drug and Cosmetic Act, administered by the Food and Drug Administration of the Federal Security Agency.

The cost of Federal meat inspection is paid by the Government insofar as the salaries of inspectors for services during regular hours are concerned. However the packer may be required to compensate the Government for overtime inspection. The cost of preparing, equipping, and maintaining the plant in condition to meet inspection requirements, and losses resulting from condemnation of animals, carcasses, or products must be borne by the owner or operator of the plant.

Inspection is not maintained at any establishment which does not slaughter cattle, sheep, swine, goats, or horses, or process meats derived from such species. (Processing consists of such operations as curing, salting, smoking, cooking, sausage-making, canning, rendering, manufacturing of compound, oleomargarine, etc.) The boning of carcasses or primal parts, the cutting of carcasses into wholesale or retail cuts in such manner that the marks of inspection are not removed, or the freezing of meats is not regarded as processing. The slaughtering of horses or the preparation and processing of horse meat must be conducted in establishments wholly separate and apart from those slaughtering cattle, sheep, swine, and goats, or preparing products derived from such animals.

In general, meat derived from cattle, sheep, swine, or goats, and meat food products consisting wholly or in part of such meat, are subject to the provisions of the Act. However, certain foods, such as pork and beans and mince meat, are not regarded as meat food products on account of the inconsiderable amounts of meat entering into their composition. The term "meat food product" is defined in Part I of the Federal meat inspection regulations.

Under certain specific provisions of the Act, retail meat dealers and farmers may make interstate shipments of meats or meat food products without operating under Federal inspection; however, the Secretary of Agriculture may, at his discretion, require that such persons apply and qualify for the inspection. The term "farmer", insofar as Federal meat inspection is concerned, is defined in the amendment to the Act of June 29, 1938.

The owner or operator of any slaughtering or meat processing plant who contemplates engaging in interstate or foreign trade in meat or products derived from cattle, sheep, swine, or goats, or furnishing such products to Federal agencies, should address the Chief, Meat Inspection Division, Office of Marketing Services, U. S. Department of Agriculture, Washington 25, D. C., and furnish detailed information relative to the nature and volume of the proposed operations. In reply, he will be informed whether the proposed business requires or entitles him to Federal inspection, and if so, he will be furnished a form upon which he may make a formal application therefor. With such application he will be required, unless such requirement is waived as provided in the next paragraph, to furnish plans and specifications of the proposed plant, as hereinafter indicated. Pending the receipt of definite information concerning the eligibility of the plant for the inspection, it is highly important that the applicant refrain from acquiring property or undertaking construction or remodeling for the contemplated operations, as failure to observe this suggestion may result in unnecessary expense and inconvenience.

When application is made for inspection for the duration of the war under the Act of Congress of June 10, 1942, the requirement that blueprints be furnished may be waived at the discretion of the chief of the division.

Drawings to Accompany Application for Inspection

Except as indicated in the preceding paragraph, blueprints of drawings with specifications, in triplicate, of the applicant's plant as he proposes to have it constructed and equipped for the inspection should be submitted to the Meat Inspection Division, Washington 25, D. C., by the applicant at the time of filing an application for interstate inspection. The drawings should be prepared to scale, preferably 1/4 inch a foot, and should include the following:

- (a) Plot plan of the entire premises showing location of all buildings, roadways, railroad trackage, streets and alleys adjoining the plant, streams, catch basins, water wells, reservoirs, and storage tanks. If near-by buildings exist on adjoining property, their height and use should be indicated. The character and surfacing of roadways, alleys, streets, and the paving of vehicular loading areas, livestock pens and alleys should be indicated.
- (b) Floor plans of each level in the various buildings showing the locations of walls, partitions, posts, doorways, windows, and other openings, floor drainage inlets and gutters, rail systems, chutes, arrangement of slaughtering layouts, location of the principal pieces of equipment, and hand-washing facilities (lavatories). The pitch of floors to drainage facilities should be indicated by grade lines. The location of sectional lines should be shown on the floor plans. For convenience in reference, it is desirable to show the north point on the floor plans as well as on the plot plan.
- (c) Cross-sections and longitudinal sections of the various buildings showing the character and finish of floors, walls, partitions, ceilings, heights of ceilings, the principal pieces of equipment, and rails.
- (d) Exterior elevations on each side of each building showing locations and sizes of doors, windows, and other openings.
- (e) Specifications or notations placed directly on the drawings, or separate from but attached to them. These specifications or notations should cover features such as source of water supply, method of sewage disposal, description of the trapping and venting of drainage lines, description of hot water system, means to dispel steam and vapor in workrooms, and screens for outer openings that would admit flies.

If the examination of the drawings and specifications shows that they meet the requirements, the formal mark of approval is placed on them and an approved set is returned to the applicant. The other two sets are retained for reference.

Because of the specialized knowledge required to design and construct a well-arranged meat packing plant, it is strongly recommended that a competent architect or engineer experienced in laying out plants for operation under Federal meat inspection be employed to prepare the drawings and specifications. It is required that the drawings and specifications be submitted for approval in advance of construction.

Location of Establishments

Features of primary importance in connection with the location of a slaughtering or processing plant which contemplates operating under Federal meat inspection are:

Water Supply: Must be ample, potable (fit for drinking), and distributed throughout the plant under pressure. Both hot and cold water should be provided, the hot water from a central heating plant of sufficient capacity or from other suitable facilities capable of furnishing an ample supply. That from public water supply systems is usually, but not invariably, acceptable. If the water is supplied from private wells, the wells should be upon the premises of the establishment and effectively protected from pollution. A non-potable water supply is a potential source of danger if there is possibility of contaminating the potable water supply of the establishment through cross-connections that do not effectively safeguard the potable supply. Therefore there should be no cross-connections of this kind. Non-potable water lines within buildings in which edible products departments are located should be avoided.

Sewage Disposal: May be into a municipal sewer system and if this is permitted by local ordinance, it is most desirable. If the discharge is into a stream, the flow must be sufficient at all seasons to carry the sewage well away from the plant. The outlet in such cases should be below low water line.

Expansion; Relation of Inedible to Edible Products Departments: In planning a plant, due consideration should be given to providing space and an arrangement of buildings that will permit of future expansion. To this end, the slaughtering department, coolers, rendering facilities, etc., should be so located that they may be enlarged without adversely affecting existing departments. A separate roadway not used for meat trucks should be provided for bringing in livestock in trucks to a pen section located in the rear of the plant. Features such as the inedible products tanking and fertilizer departments and catch basins for grease recovery should be suitably located in the rear of the plant so as to avoid objectionable conditions affecting the preparation and handling of edible products.

Separation: An establishment operating under Federal meat inspection must be completely separated from any other plant and buildings, whether used for industrial, commercial, residential, or other purposes. No communications by means of doorways, windows, stairways, elevators, or passageways, loading or unloading platforms, or loading courts are permissible.

Construction

Floors, Walls, and Ceilings: To promote good sanitation the floors, walls, and

ceilings in the various workrooms should be constructed of material that can be readily kept clean. Wood structures and equipment are absorbent and difficult to keep clean, and for that reason the use of wood should be restricted as much as possible. In lieu of dressed and matched lumber, the use of plywood which is available in large sheets, is preferable as there are fewer joints that offer a harbor for roaches or other vermin. Floors requiring drainage should be constructed of impervious material, such as dense concrete or vitrified floor brick of good quality laid on a concrete base. Interior wall and, so far as structural considerations permit, ceiling surfaces should be smooth and flat. Wall surfaces in workrooms should be constructed of glazed brick, glazed tile, smooth cement plaster, or other nonabsorbent material. Ceilings should be of good height (about 10 feet or more), and to avoid damage to glass in windows from impact of hand trucks, the window sills should be 3 feet or more above the floor.

Floors and Drainage: All parts of floors where wet operations are conducted should be well drained. A pitch of about 1/4 inch per foot to drainage inlets is desirable for usual conditions. To avoid accidents, excessively smooth floors should be avoided. Good results have been obtained by laying concrete floors with a topping containing hard particles so as to afford a good foothold, or by giving them a wood float finish. Each floor drain, including blood drains, should be equipped with a deep-seal trap (P-, U-, or S-shape). The drainage lines should be at least 4 inches in diameter and properly vented to the outside air. Drains for paunch contents should be at least 8 inches in diameter to avoid clogging. Drainage lines from toilet bowls and urinals should not be connected with other drainage lines within the building and should not discharge into a grease catch basin. Such lines should be located so that if leakage develops it will not affect product. Where there is a likelihood that the water seals in traps will evaporate without replenishment from floor drainage, as in the case of dry-storage rooms, the floor drains should be provided with suitable removable plugs. Floor drainage valleys about 24 inches in width are required under the dressing rails for hogs, sheep, and calves.

Lighting: The regulations require that unrefrigerated workrooms be provided with means for furnishing adequate direct natural light and ventilation. Un-colored glass having a high transmissibility of light should be used in windows and skylights, and the glass area should approximate one-fourth of the floor area of a workroom. This ratio should be increased where there are obstructions which interfere with the admittance of natural light, such as adjacent buildings, overhead catwalks, and hoists. Well distributed artificial lighting of good quality is required at all places where, or at times when adequate natural light is not available. When reliance must be upon artificial lighting, the overall illumination should be not less than 20 foot candles. At all places where inspections are made or where special illumination is required to enable establishment employees to properly prepare products of any character to meet the requirements of the inspection, the illumination should be not less than 50 foot candles.

Ventilation: Adequate means for ventilation should be provided in workrooms. This may be furnished by means of ventilating type windows and sky-lights or by artificial means such as a system of ventilating ducts. In locations subject to the presence of dust and objectionable odors, such as those adjoining livestock pens, runways, etc., windows should be of the fixed type. In refrigerated rooms where a considerable number of operatives are continuously employed, as in cutting rooms and bacon-slicing rooms, where natural ventilation is limited, adequate artificial ventilation should be supplied. An adequate amount of outside air to avoid vitiation should be continuously introduced into such rooms and the fresh air intakes should be so located that the air is not contaminated with dust, smoke, etc.

Equipment

Equipment should be so constructed that it can be readily kept clean. Excepting equipment such as curing vats and cutting boards, metal equipment should be provided. The use of rust-resisting metal such as stainless steel is desirable for equipment subject to hard usage and corrosion, such as viscera inspection pans and trucks and the tops of sausage-stuffing tables.

Sheet-metal coverings on sidewalls, posts, tops of wood tables, the inner surfaces of meat-handling trucks, meat chutes, and curing and cooking containers have proved unsatisfactory from the standpoint of sanitary maintenance and are not acceptable.

Equipment wasting water, such as soaking and cooking vats and sausage-stuffing tables, should be installed so that waste water is delivered into the drainage system without flowing over the floor. Soaking and cooking vats should be provided with overflow pipes at least two inches in diameter. The upper end of each overflow pipe should be equipped with an open-end clean-out tee to facilitate cleaning. Stationary equipment and equipment not readily removable should be placed at least 12 inches from floors, walls, posts, and other fixed parts of the building and from other equipment to facilitate ready cleaning of outer surfaces. Vent stacks from covered cooking vats should be so arranged as will preclude drainage of condensate back into the vats.

A separate washroom or area should be provided for cleaning hand trucks, utensils and containers such as boxes and trays. The room or area should have adequate direct natural light and ventilation, impervious well-drained floor, and impervious walls and ceiling.

Conveniently located hand-washing facilities (lavatories) should be provided for the use of employees and inspectors. Each lavatory should be supplied with hot and cold running water delivered through a combination mixing faucet with outlet about 12 inches above the rim of the bowl to facilitate washing arms as well as hands, liquid soap in a suitable container, an ample supply of sanitary towels, and a suitable receptacle for used towels. Lavatories in workrooms should be pedal-operated. Sterilizers for knives, cleavers, and other implements should

be provided adjoining the lavatories where required. Sterilizing receptacles should be constructed of rust-resisting metal and should be of sufficient size for complete immersion of the implements in scalding hot water. Each sterilizing receptacle should be provided with a water line, a steam line, an overflow, and facilities for completely emptying the receptacle.

Sanitary drinking fountains for the use of employees should be provided in large workrooms and in dressing rooms. If desired, they may be located at lavatories and so arranged that the overflows discharge into the bowls of the lavatories. If so located, they should be placed sufficiently high above the bowls to avoid splash onto them when the lavatories are used.

The locations of lavatories, lavatory-sterilizers, drinking fountains, and other similar features should be shown on the drawings.

Slaughtering Departments

Slaughtering departments should have adequate floor space and be arranged to facilitate the sanitary conduct of operations and the efficient performance of the inspection. Truckways over which products are conveyed from the slaughtering room to rooms such as the offal cooler, the edible products charging room, and the inedible products charging level should be located so that the material is not trucked beneath rails from which dressed carcasses and product are suspended. The truckways should be clearly designated on the drawings.

The maximum hourly rate of slaughter for each kind of animal slaughtered and whether more than one kind of animal will be slaughtered at the same time should be given on the drawings of all slaughtering layouts submitted for approval. Also, it should be stated whether animals will be slaughtered by the kosher method.

To avoid delays for ante mortem inspection, sufficient pen capacity for holding the maximum number of animals of the various kinds that will be slaughtered in a single day should be provided in the pen section. The pens and runways should be paved with concrete or brick and, except at gateways, have side curbs of similar impervious material 12 inches or more in height and suitable drainage facilities.

To facilitate the ante mortem inspection of animals, ample natural and artificial lighting, and a suitable suspect pen and a squeeze pen for temperaturating animals should be provided. Holding and shackling pens should be located outside of or effectively separated from the slaughtering room, so as to avoid objectionable conditions in the room due to dust and odors.

Suitable facilities should be furnished for bringing crippled animals into the slaughtering room, and power-driven hoists should be provided for elevating cattle, hogs, calves, and sheep to a bleeding rail.

Suitable properly located facilities and adequate space for them should be pro-

vided for separating the viscera of the various species of animals slaughtered. The cattle paunch emptying table should be equipped with a power-operated lift, and if paunches are saved for edible purposes, the top of the table should extend over the emptying hopper about 12 inches and the sides of the hopper should extend down vertically below the top of the table at least 3 feet to avoid soiling the serous surfaces of paunches.

Prints showing desired arrangements and features relative to slaughtering facilities at establishments where Federal meat inspection is maintained, scale drawings of dressed carcasses, and a summary of principal minimum distances, some of which also appear upon the drawings, are included herewith for the information of owners and architects. Moving-top viscera inspection tables and carcass conveyors synchronized in their movement with the inspection tables are required when the maximum rate of slaughter exceeds 60 hogs, 60 calves, and 75 sheep per hour. The prints indicate some types of equipment desired for rates higher than those mentioned, but because of the many features involved in large layouts, it is not feasible to include all details. The Meat Inspection Division will be pleased to furnish further information regarding the requirements for large slaughtering layouts upon request.

Slaughtering Facilities

The following should be provided in departments for slaughtering cattle, calves, sheep, and hogs:

- Cattle: (1) Dry area at least 5 feet wide in front of the knocking pen for receiving stunned animals ejected from the pen, the area to be separately drained and sufficiently removed from the bleeding area.
- (2) Curbed-in bleeding area so located that blood will not be splashed upon stunned animals lying on the dry area or upon carcasses being skinned on the siding beds.
- (3) A distance of 16 feet or more between the vertical of the drop-offs to the pritch-plate area and the vertical of the line of the hoists where carcasses are eviscerated. This is needed to provide space for the evisceration of carcasses, the trucking of product, and for the inspections made at this point.
- (4) Fourteen feet or more between the line of the aforementioned hoists and the header rail leading to the cooler, to provide length of dressing rails needed for dropping hides, splitting chucks, etc. (See Print 2.)
- (5) At least 3 feet between the header rail and the adjacent wall for the clearance of dressed carcasses transferred on the rail. (See Print 2.)
- (6) Bleeding rail with its top at least 16 feet above the floor and dressing rails at least 11 feet above the floor. (See Prints 1 and 2.)
- (7) Suitable facilities and adequate floor space for flushing and washing,

inspecting and storing heads on racks or trucks after removal from carcasses. (Show the details of the construction of this equipment on the drawings -- see Print 16.)

(8) Separately drained area for cleaning and disinfecting viscera inspection trucks. Area to be about 7' x 8' with impervious walls 6 feet or more in height on three sides to confine splash. Floor of the area to be pitched about 1/2 inch per foot to a drain in a rear corner.

(9) Efficient drainage facilities for the dressing beds. The pritch-plate area should pitch in a plane from a high-line about 2 feet in the rear of the rumps of pritched carcasses to the edge of the pritch plates and then converge to a floor drain in front of the curb of the bleeding area. From said high-line, the floor should pitch in the other direction to a floor drain centrally located between the dressing beds and about 3 feet beyond the line of the hoists where carcasses are eviscerated. (See Print 2.)

(10) A properly constructed hide chute near the point where hides are removed from carcasses. The chute should have a hood of substantial metal construction with a push-in door closely fitting a metal frame inclined so as to be self-closing by gravity. The hood should have a vent pipe at least 10 inches in diameter extending to a point above the roof.

(11) Viscera inspection trucks and head inspection facilities (trucks or racks) of suitable type.

Calves and Sheep: (1) Bleeding rail with its top at least 11 feet above the floor. If sheep only are handled in the bleeding section, the height of the bleeding rail may be less (about 9 feet).

(2) Dressing rails of such height that gambrels or leg hooks from which carcasses are suspended are 6' 6" above the floor. If calves are slaughtered by the kosher method, space for removal of heads before carcasses dressed with the skins on are washed and for the placement of the removed heads on a head truck for conveyance to the place of viscera inspection is required. An unobstructed route for conveying the heads to the point of inspection should be provided.

(3) Adequate space along the rail for skinning legs and for skinning and removing calf heads before carcasses are transferred from shackles to gambrels. (The transfer point and the places where the principal dressing operations are performed should be indicated on the drawings.)

(4) Proper facilities for washing the skins of calf carcasses before making incisions, except the sticking wounds, if carcasses are dressed with the skins on.

(5) Suitable facilities for flushing, washing, inspecting, and storing calf heads.

(6) Facilities for the inspection of viscera, consisting of a hopped metal stand of the proper size to accommodate two inspection units of two pans each (total four pans - length of stand about 6 feet), the larger pans (for the inspection of abdominal viscera) to be 24" x 30" x 3", and the smaller pans (for thoracic viscera) to be 12" x 30" x 3", the pans to have handles for convenient removal so located that they do not interfere with the movement of the inspector and eviscerator alongside the stand and perforated with holes about

1/4 inch in diameter, 3 inches on centers. The height of the stand is to be such that the bottoms of the pans are about 34 inches above the floor when in use in the stand. Stand to be directly connected to the drainage system through a deep-seal trap or waste pipe to discharge directly into a floor drain. The stand when in use is to be placed with its longest dimension at right angles to the dressing rail and its end about 2 feet from the rail, measured horizontally.

(7) Drip valley 24 inches wide beneath the dressing rail from the bleeding area to the point where viscera inspection is completed.

(8) Calves of such size that there is not a clearance of at least 8 inches above the drip valley when suspended from the dressing rail or whose viscera is of such size that it is not readily transferred manually and unaided by the eviscerator from the carcasses to the inspection stand are not to be dressed on a dressing rail but skinned and eviscerated as cattle on the cattle dressing beds. (Notation covering this should be placed on the drawings.)

(9) Suitable facilities for washing sheep carcasses after removal of pelts and for washing calf and sheep carcasses after evisceration.

Hogs: (1) Scalding vat and gambreling table constructed of metal; dehairing machine located within a curbed-in area having non-clogging drainage inlet; gambreling table; facilities for dipping carcasses in a rosin mixture as an aid to cleaning them (if installed); and singeing operations located in a compartment separated from the carcass dressing room, except for the necessary openings for the passage of carcasses and for access.

(2) Top of carcass dressing rail at least 10 feet above the highest part of the floor if 12-inch trolleys are used. (If the future installation of a moving carcass conveyor is contemplated which requires 11-foot rails, it is advisable to make provision for this by placing the rail beams at the proper height for 11-foot rails and to install a 10-foot rail with long hangers or to install an 11-foot rail and use 24-inch trolleys.)

(3) A drip valley 24 inches wide and integral with the floor, pitched to properly located drainage inlets in the valley. The drip valley should extend from the point where carcasses leave the gambreling table to the point where carcass inspection is completed. The floor may be pitched to drain to the drip valleys.

(4) Shaving rail of adequate length and a carcass washer of the cabinet type having separate drainage facilities.

(5) U-shape loop rail where carcasses are dressed and inspected so that one inspector may perform all the necessary inspections. The width of the U-shaped rail should be 11 feet and the depth 12 feet or more. (See Prints 10 and 11.) A hoppered metal stand (see Print 17) should be provided for the inspection of viscera and placed within the loop rail as shown on Print 10. The stand should be of the

proper size to accommodate a viscera inspection pan 24" x 30" x 3." Pans should have perforated bottoms. The height of stand should be the same as the aforementioned stand for the inspection of calf and sheep viscera. A conveniently located receptacle containing hot water should be provided for sterilizing the viscera inspection pans. Two pans should be provided, one for use in the stand while the other is being sterilized.

Other Requirements

The cooler facilities should have ample capacity for the volume of slaughtering conducted. Cooler rails should be spaced at least 2 feet from walls, columns, refrigerating equipment, and other fixed parts of the building. The type of refrigeration should be indicated, and, if wall coils are installed, a drip gutter of concrete or other impervious material integral with the floor and properly connected with the drainage system should be provided beneath the coils. If overhead refrigerating facilities are installed, insulated drip pans properly connected to the drainage system should be placed beneath them. Walls of coolers should be of impervious material and of such construction that they will not be damaged by the impact of hand trucks. The tops of cooler rails above the highest part of the floor should be at least 11 feet for halves of beef, 9 feet for hog carcasses with heads removed (trolleys 12 inches long), and 7' 2" for quarters of beef. Calf and sheep carcasses should be suspended so that the hooks or gambrels are at least 6' 6" above the floor.

A suitable compartment should be provided in a cooler for holding retained carcasses and parts. The compartment may be separated from the remainder of the cooler by partitions of heavy wire (No. 9 gauge 1-inch mesh is suitable) extending from about 2 inches above the floor to the ceiling. The compartment should have a door of similar material at least 4 feet wide, equipped for locking or sealing. If it is desired to save cattle carcasses retained for refrigeration on account of infestation with *cysticercus bovis*, a similar compartment for holding such carcass in a freezer at a temperature not higher than 15° F. for at least six days should be provided. Suitable facilities for holding edible organs and parts (offal) under refrigeration in a separate cooler or in a separately drained part of a carcass cooler are required.

Doors through which product is transferred on rails or in hand trucks should be at least 4 feet wide.

Well arranged facilities for rendering inedible and condemned material should be provided at slaughtering plants. Inedible products departments must be separate and distinct from those used for edible products, except that the tank-charging room of the inedible products rendering department is allowed one connecting doorway from the slaughtering or viscera separating departments. The arrangement of the inedible products tankhouse should be such that material is elevated to an upper level and gravitated to rendering units in a lower level. At least two rendering units should be provided for the prompt disposal of condemned and inedible material in case of the breakdown of one of the units. If rendering facilities are not provided, it is required that condemned material be denatured and held in water-tight containers in a suitable inedible products room pending daily removal to a rendering plant. Permission to convey such material over public streets and highways should be obtained from the State and local authorities having jurisdiction in such matters.

Waste material such as paunch contents, hog hair, blood, and pen manure must be disposed of without creating objectionable conditions, and the drawings or specifications should indicate how this will be accomplished.

Every practicable precaution should be taken to keep official establishments free of flies, rats, mice and other vermin. Rat-proof construction is recommended as an effective means of preventing rat infestation. Control of roaches is in a large degree dependent upon structural conditions. Therefore, types of construction which do not offer hiding places and harbors for them are highly desirable.

Catch basins for the recovery of grease should be suitably located and not placed near edible products departments or areas where edible products are unloaded from or loaded onto vehicles. To facilitate ready cleaning, such basins should have inclined bottoms and should not be provided with covers. They should be constructed so that they can be completely emptied of their contents for cleaning, and hose connections for furnishing hot water for clean-up purposes should be provided at convenient locations near the basins. The area surrounding an outside catch basin should be paved with impervious material such as concrete and provided with suitable drainage facilities. Suitable facilities for the transfer of grease to the point of disposal, after it is skimmed from the basins, should be provided.

Welfare Rooms: Well-located and properly separated toilet and dressing-room facilities are required for employees of each sex. The number of employees using each dressing-room should be given on the drawings. Each employee should be provided with a metal locker at least 15" x 18" x 60". To permit ready cleaning beneath the lockers, they should be raised about 16 inches above the floor on legs or other suitable supports. The lockers should have sloping tops. To maintain orderliness and to permit of ready cleaning of the floor under the lockers, it is desirable to provide a loose wood plank seat about 12 inches wide in front of and below the doors of the lockers. The aisle width between the removable wood seats should be about 5 feet in large dressing rooms.

Dressing rooms must be separated from adjoining toilet rooms by tight, full-height walls or partitions. A toilet room should not be entered directly from a work-room, but through an intervening dressing room or toilet room vestibule. Toilet rooms, dressing rooms, and toilet-room vestibules should have solid, self-closing doors completely filling the doorway openings. Water closets should be provided in sufficient number for the employees using them (at least one unit for 25 men or 20 women). A sufficient number of modern-type wash basins (lavatories) are required in welfare rooms, and such rooms, particularly at plants where slaughtering operations are conducted, should be provided with suitable shower-bath facilities. The floors of toilet rooms and dressing rooms should be of impervious material and be pitched about 1/8-inch per foot to properly located floor drainage facilities. (If stall type urinals are provided, the floors should pitch to drain into the urinals; if the urinals are of the wall type, floor drains should be provided immediately beneath such fixtures.) Such rooms should have means for furnishing abundant direct natural light and good ventilation.

Inspector's Office: A well-located inspector's office is required at each official establishment. The office should be located so that it is not entered through a company office, and it should be supplied with suitable furniture, including a desk and chairs, a metal locker for each Government employee, provided with hooks for clothing, a metal cabinet equipped for locking for the storage of supplies, and lavatory facilities. Shower-bath facilities should be provided in the inspectors' quarters at establishments where slaughtering operations are conducted, and adequate separate toilet-room and dressing room facilities should be included in the inspectors' quarters at establishments of such size that the assignment of several inspectors is required.

The foregoing covers some of the principal construction and equipment requirements of the Federal Meat Inspection Service. This information is subject to change as found necessary, due to developments in methods, equipment, etc. Widely varying conditions are met in designing meat packing plants and, therefore, it is not practicable to furnish complete information for owners, architects and engineers. If further information is desired, the Washington office of the Meat Inspection Service will be pleased to furnish it.

S U M M A R Y
PRINCIPAL MINIMUM DISTANCES

(Rail heights are measured from top of rail to highest part of floor)

Cattle Slaughtering Departments

Description	Vertical Distances
Bleeding rail (distance from rail to point of application of shackle to shackled foot - 48")	16' 0"
Dressing rails (trolley length - 15")	11' 0"
Beef cooler rails (trolley length - 15")	11' 0"
Rails for beef in quarters (trolley length - 15")	7' 2"
Moving equipment - Heights of conveyor rails, platforms, top of viscera inspection table, etc.	See dimensions on attached white prints
Description	Horizontal Distances
Dry area in front of knocking pen	5' x 8'
Curb of bleeding area to pritch plates (no header rail)	5' 0"
Line of drop-offs to line of half hoists	16' 0"
Line of half hoists to header rail leading to cooler	14' 0"
Between header rail and carcass washing rail, if parallel	6' 0"
Between header or washing rails and wall of slaughtering room	3' 0"
Between center lines of dressing beds	8' 0"
Between pairs of dressing rails	4' 0"
Area for sterilizing viscera inspection truck	7' x 8'

Calf and Sheep Slaughtering Departments

Description	Vertical Distances
Bleeding rails for calves (distance from top of rail to point of application of shackle to shackled foot - 30")	11' 0"
Bleeding rails if only sheep are slaughtered	9' 0"
Gambrels or leg hooks from which calf or sheep carcasses are suspended to floor or inspector's foot platform	6' 6"
Cooler rails, calf carcasses	Gambrels 6' 6" above floor
Cooler rails, sheep carcasses on legs	Hooks of legs 6' 6" above floor
Moving equipment	See attached white prints
Description	Horizontal Distances
Vertical of rail to edge of viscera inspection stand	2' 0"
Length of rail from point of evisceration to point where carcass inspection is completed	6' 0"

Hog Slaughtering Departments

Description	Vertical Distances
Bleeding rail to sticker's platform	10' 6"
Extension of bleeding rail to top edge of scalding vat	9' 0"
Dressing rails (24" trolleys) (stationary equipment)	11' 0"
Gambrels (suspending carcasses) to floor	9' 0"
Rail to eviscerator-splitter's platform	8' 11"
Bottom of viscera inspection pan, in inspection stand, to floor	0' 34"
Moving equipment. Rail height 11' 0". For distances from rail to bottom of inspection pans and various foot platforms	See dimensions on attached white prints
Rails in coolers for hog carcasses with heads removed (24" trolleys)	10' 0"
Rails in coolers for hog carcasses with heads removed (12" trolleys)	9' 0"
Rails in coolers for carcasses with heads attached (12" trolleys)	10' 0"
Description	Horizontal Distances
Width of U-shape loop (stationary equipment)	11' 0"
Depth of U-shape loop	12' 0"
Vertical of dressing rail to eviscerator-splitter's platform	0' 15"
Edge of eviscerator-splitter's foot platform to inspection stand	0' 9"

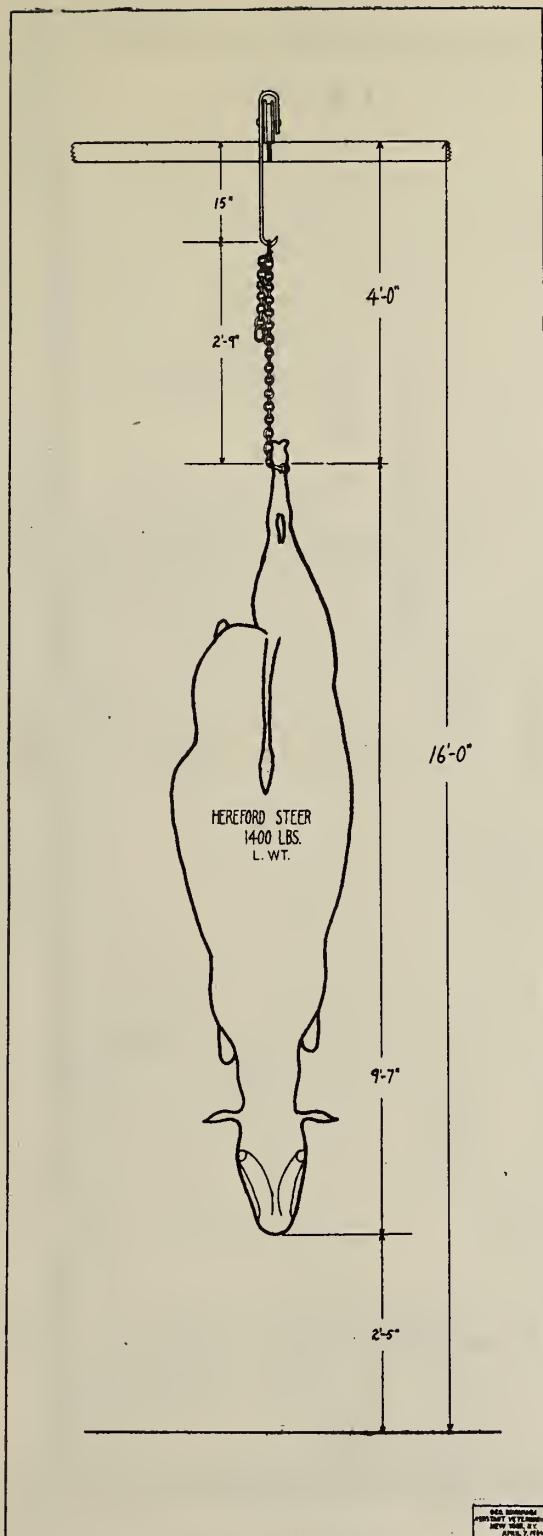
Horse Slaughtering Departments

Description	Vertical Distances
Bleeding rail	18' 0"
Dressing rails (trolley length 16")	12' 6"
Cooler rails	12' 6"

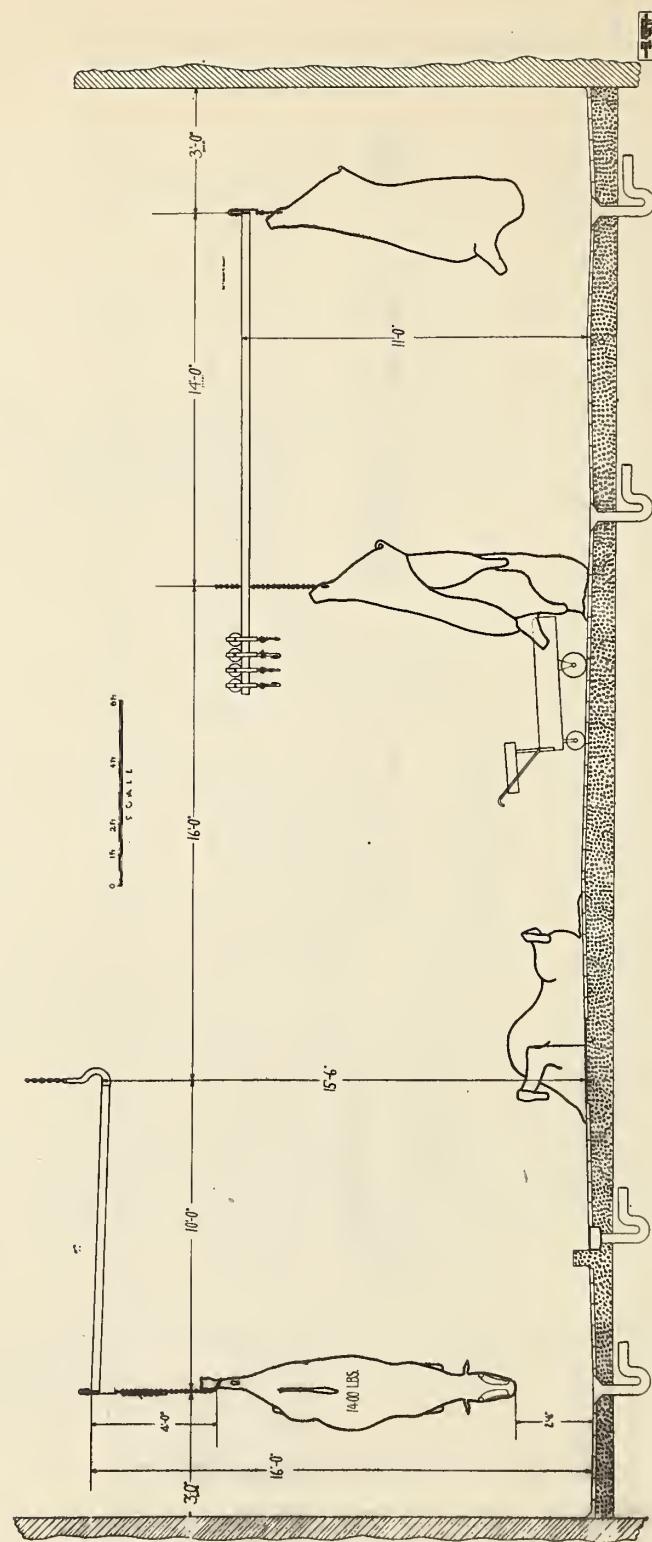
Description	Horizontal Distances
Line of drop-offs to line of half hoists	17' 0"
Clearance between walls, posts, etc., and adjoining rails in slaughtering rooms and coolers	0' 30"
Curb of bleeding area to pritch plates	6' 0"

General

Description	Vertical Distances
Rails for sausage cages, etc.	7' 6"
Description	Horizontal Distances
From verticals of rails in slaughtering room and coolers, etc., to walls, posts and other fixed parts of the building	2' 0"
From vertical of conveyor rails for sausage cages to stuffing tables	5' 0"
From vertical of carcass rails to edge of boning or cutting table	5' 0"
Width of doors through which carcasses are railed or product conveyed in hand trucks	4' 0"
Truckways - unobstructed width	5' 0"



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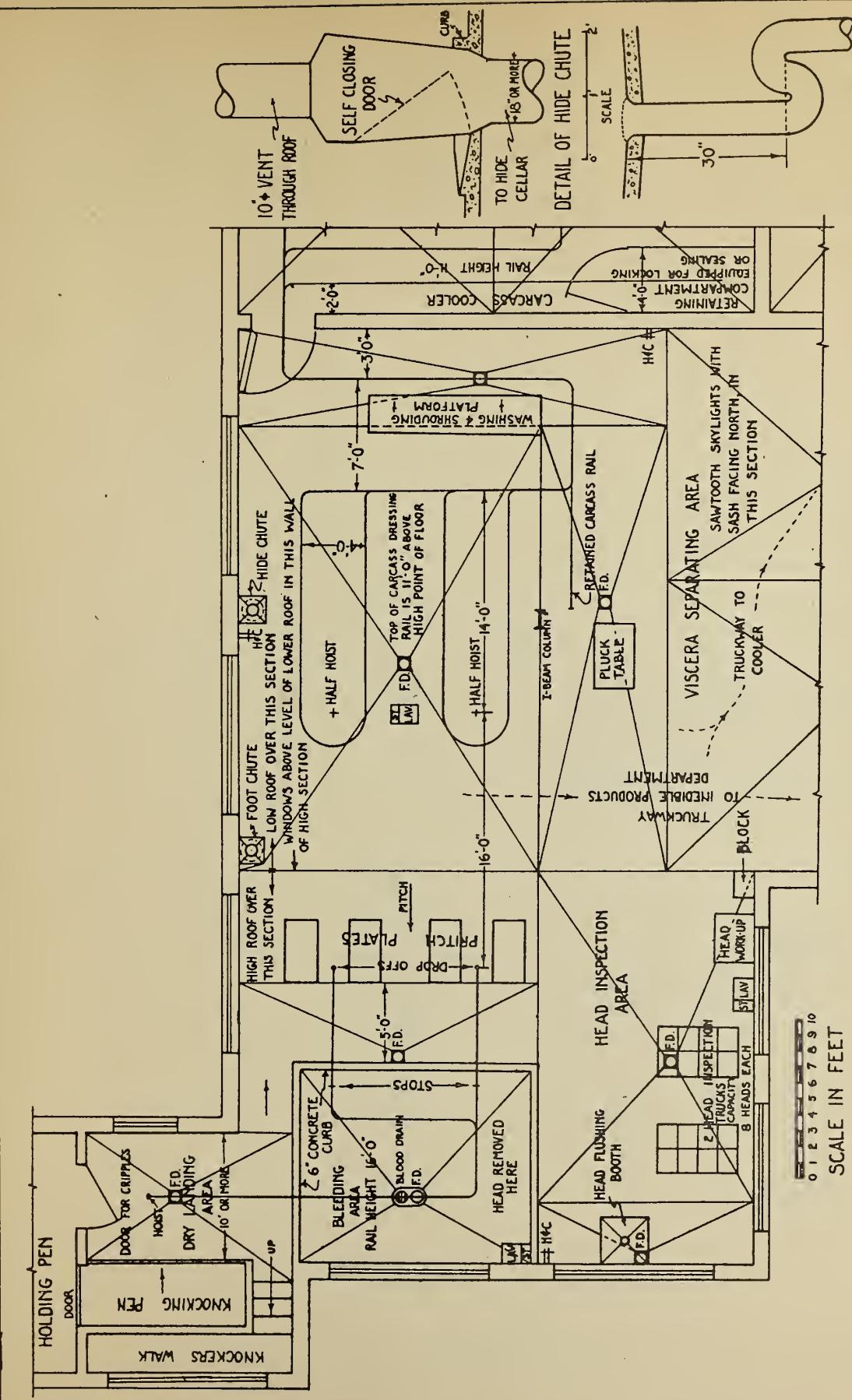


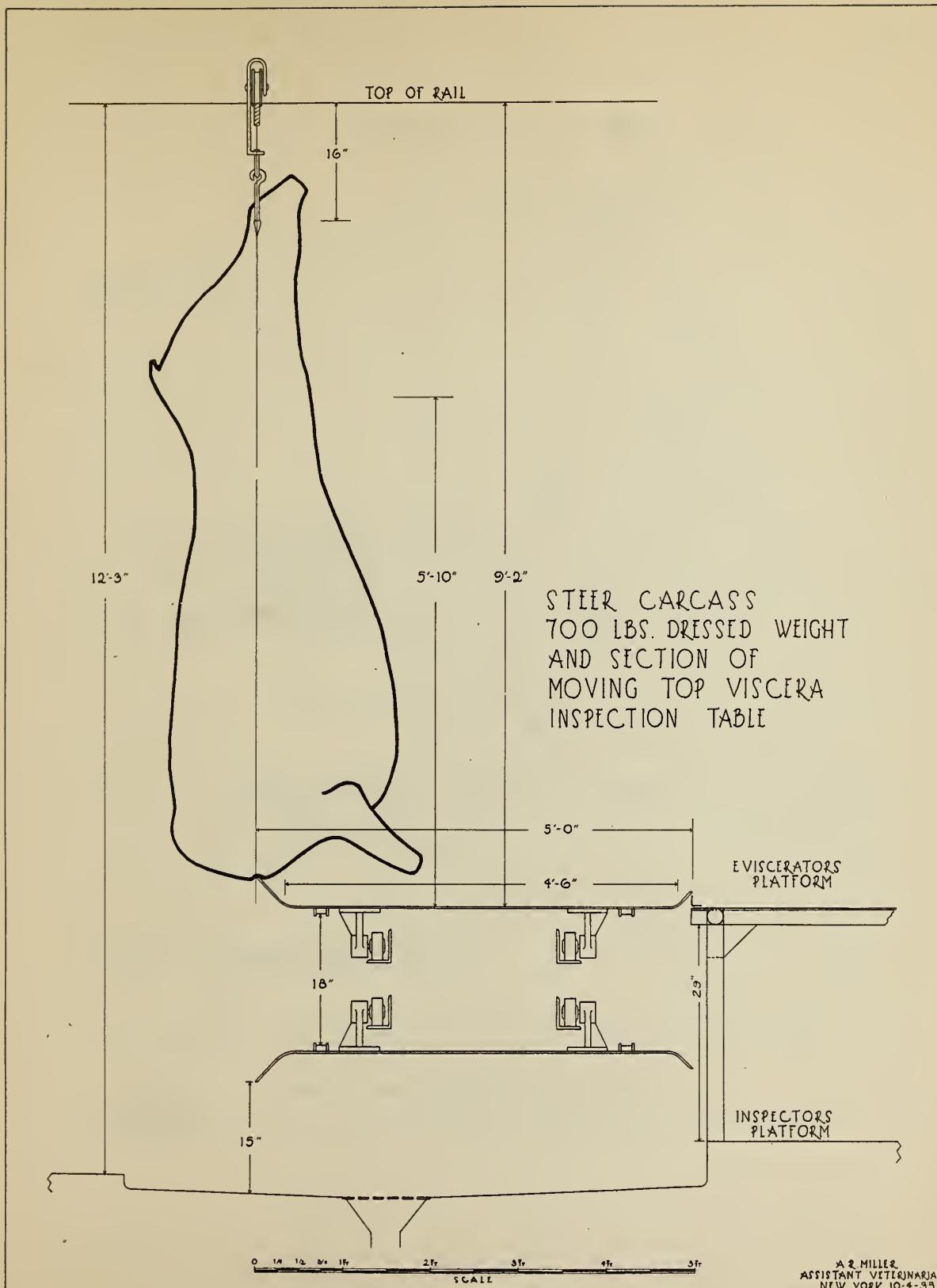
TWO BED CATTLE SLAUGHTERING LAYOUT

MAXIMUM RATE OF SLAUGHTER - 20 CATTLE PER HOUR

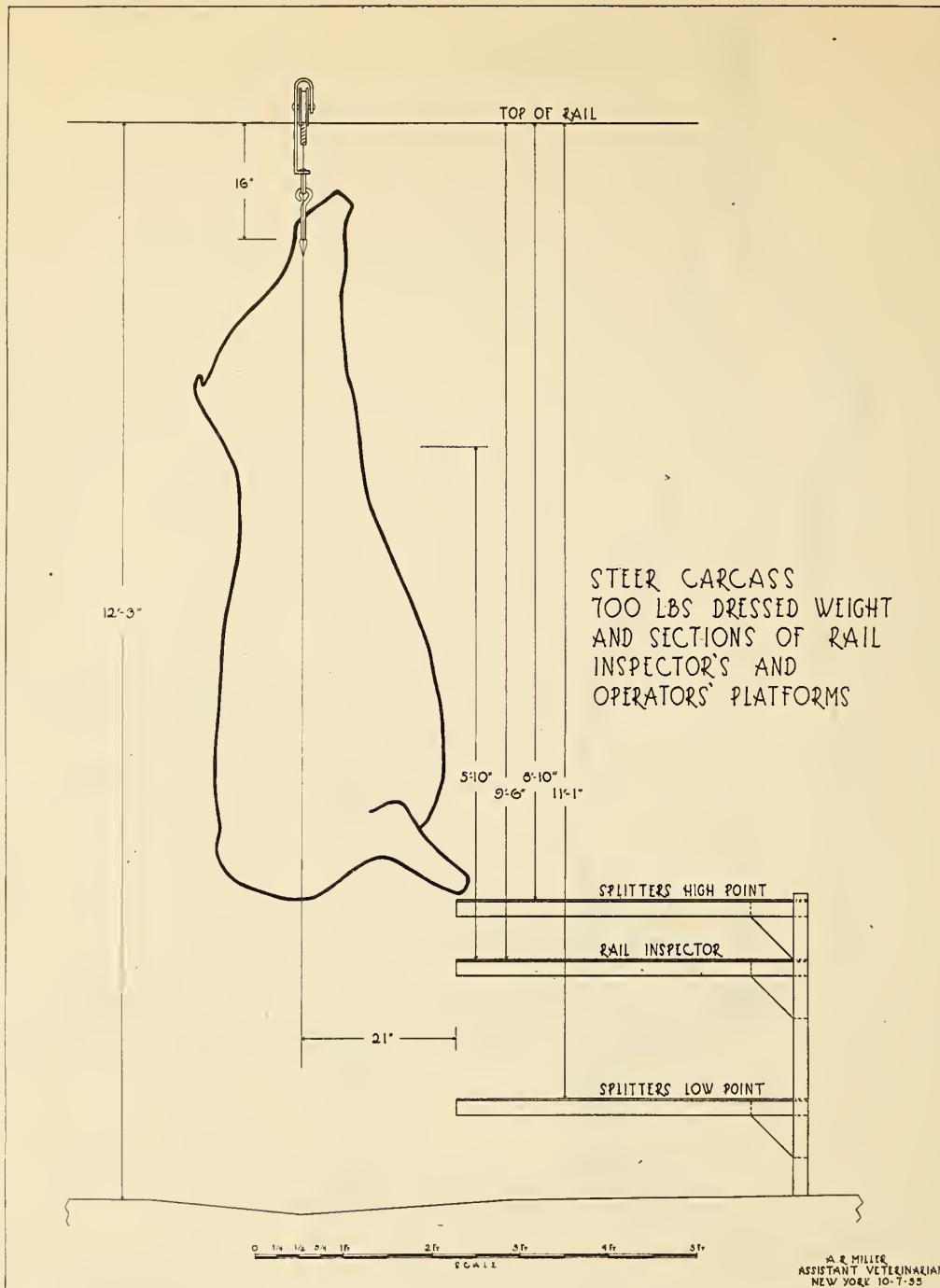
DEEP SEAL TRAP

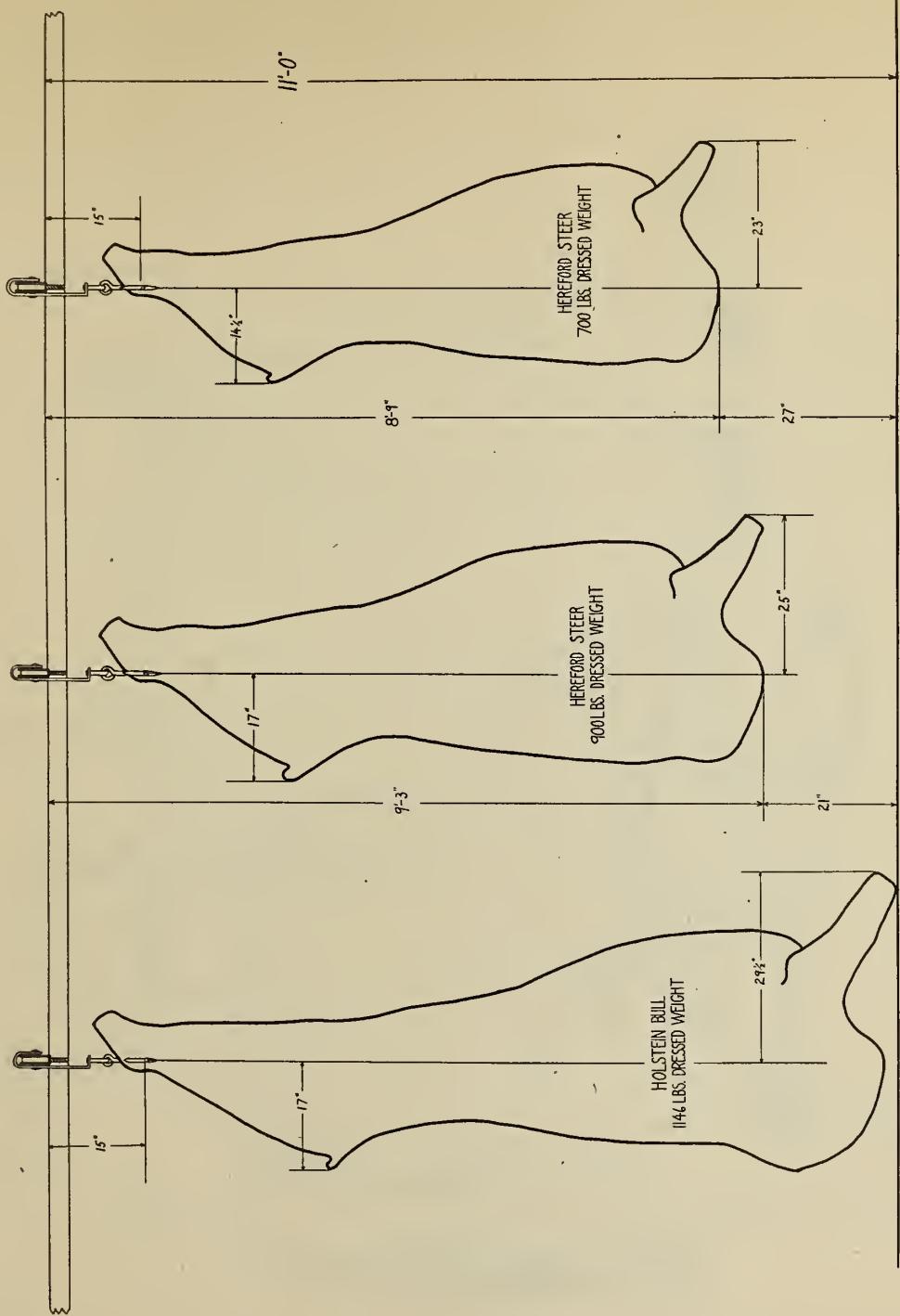
H. HRAJIL
M.D.
WASHING-
TON D.C.
2-25-

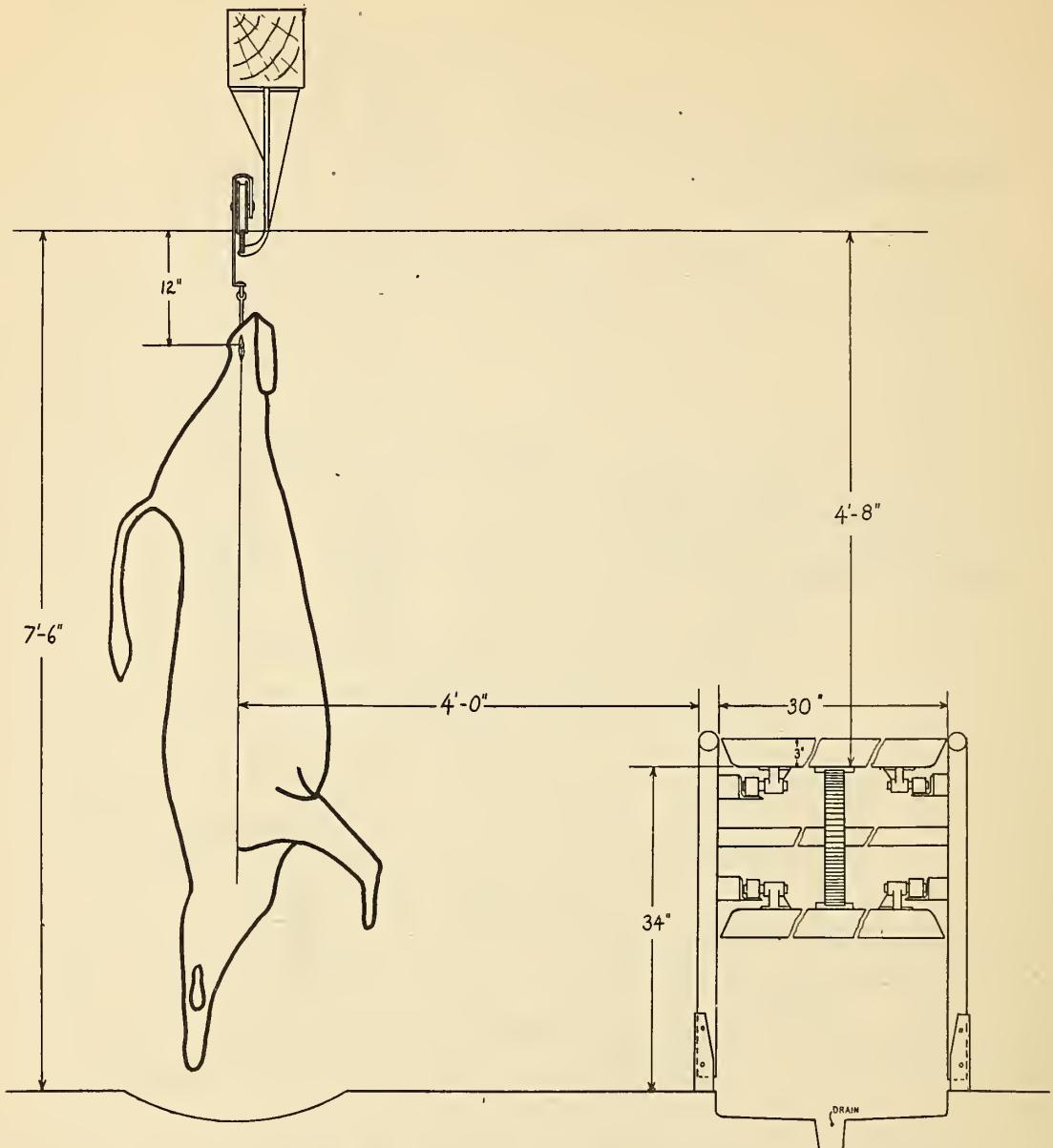




A. R. MILLER,
ASSISTANT VETERINARIAN
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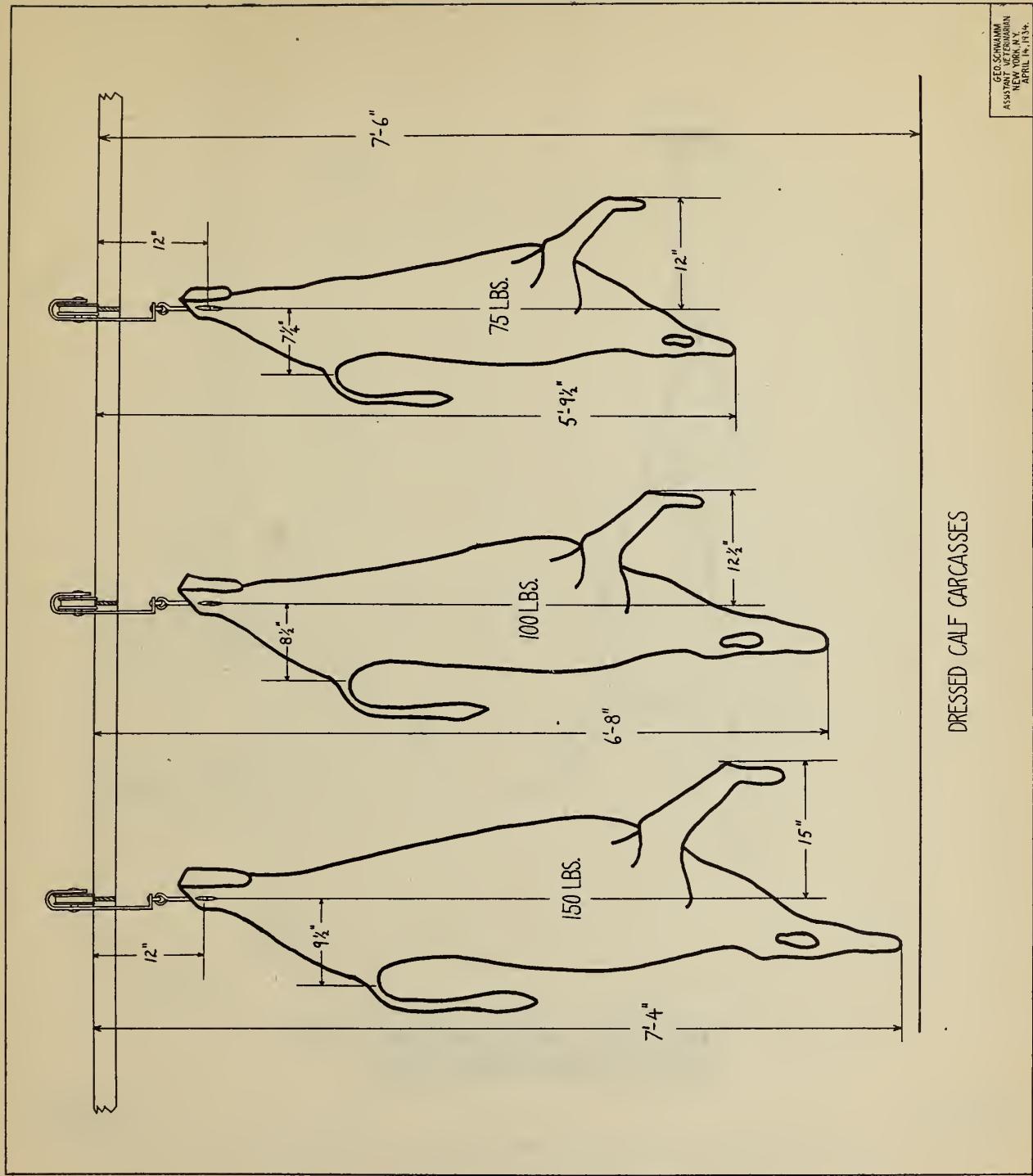






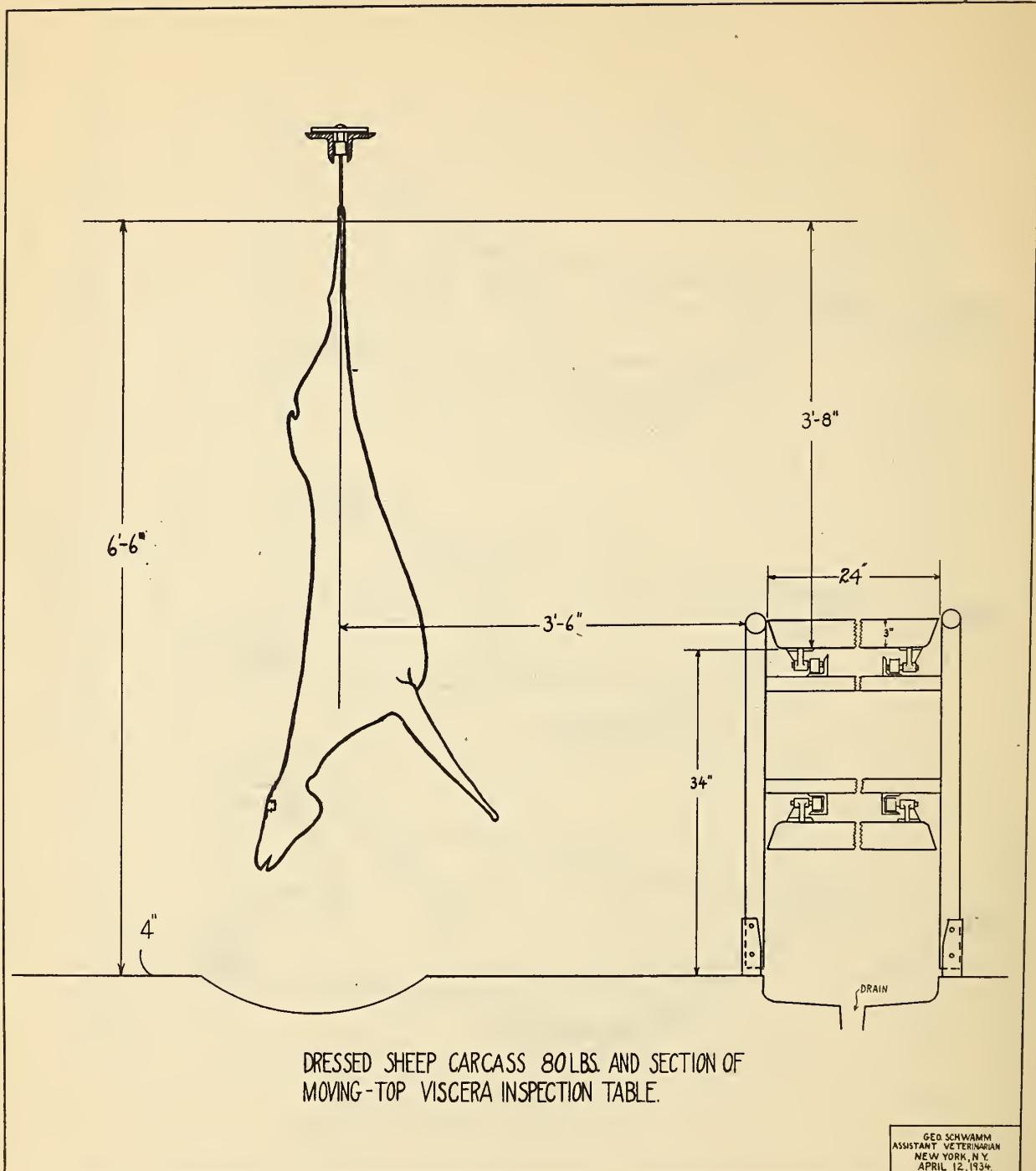
DRESSED CALF CARCASS 150 LBS. AND SECTION OF
MOVING-TOP VISCERA INSPECTION TABLE.

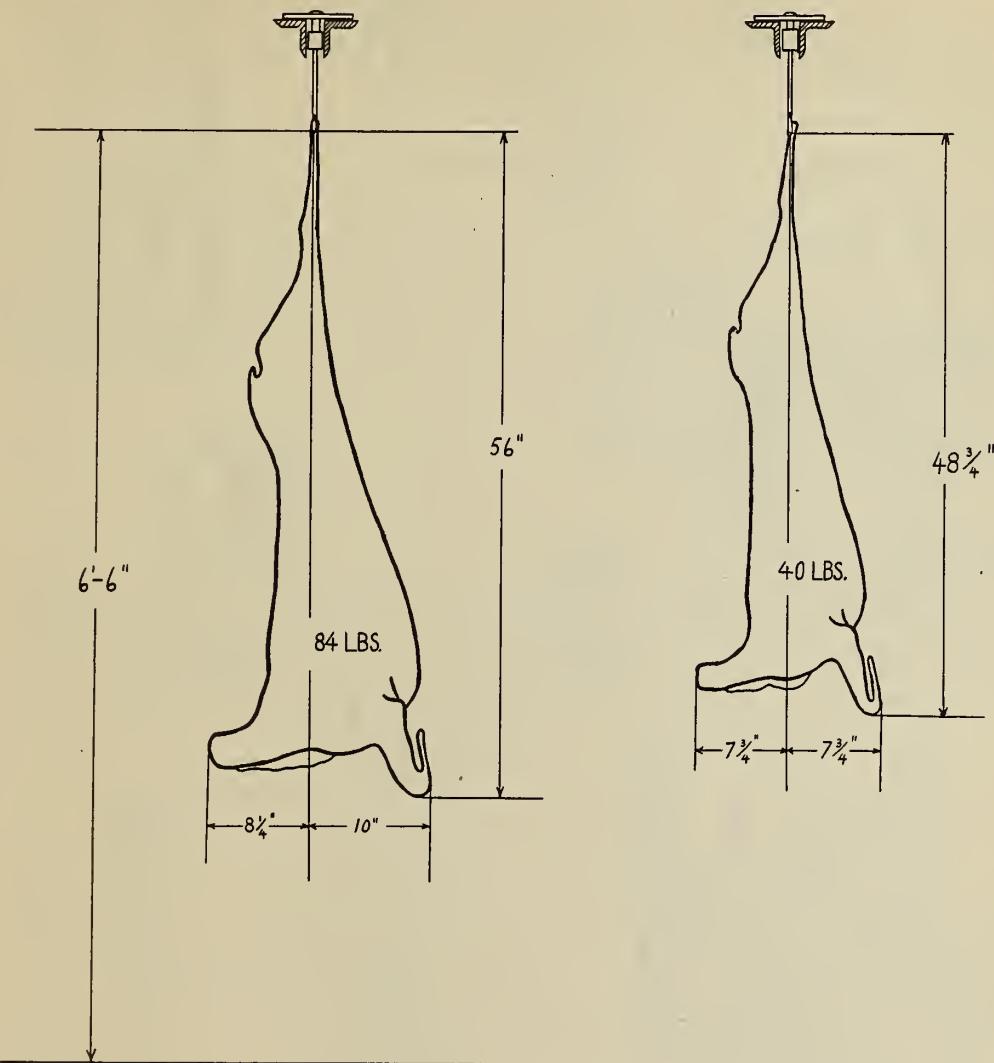
OEO GORNICK
ASSISTANT VETERINARIAN
NEW YORK,
APRIL 11, 1934



DRESSED CALF CARCASSES

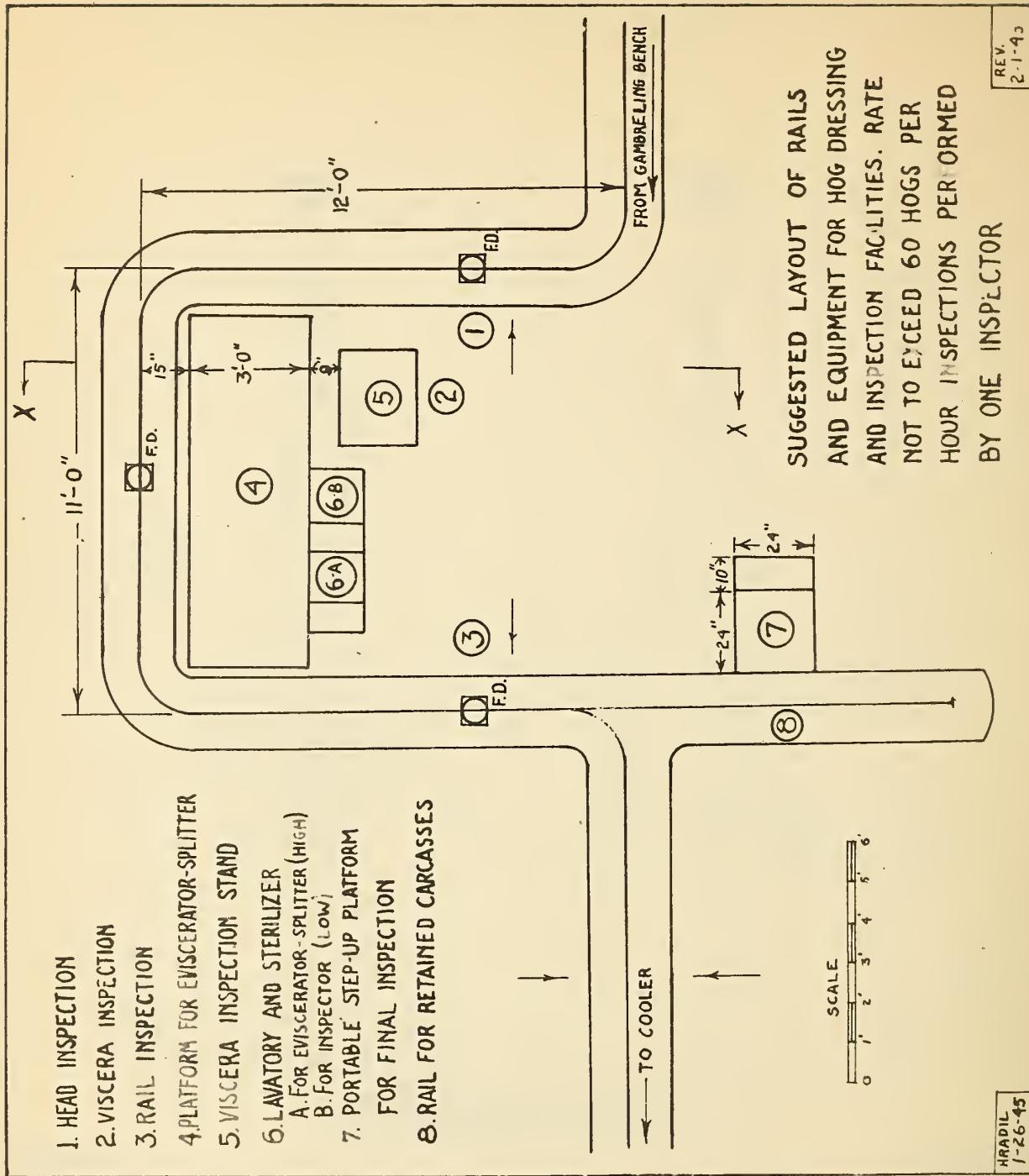
GEO SCHUMM
ASSOCIATES
NEW YORK, N.Y.
APRIL 1, 1934.



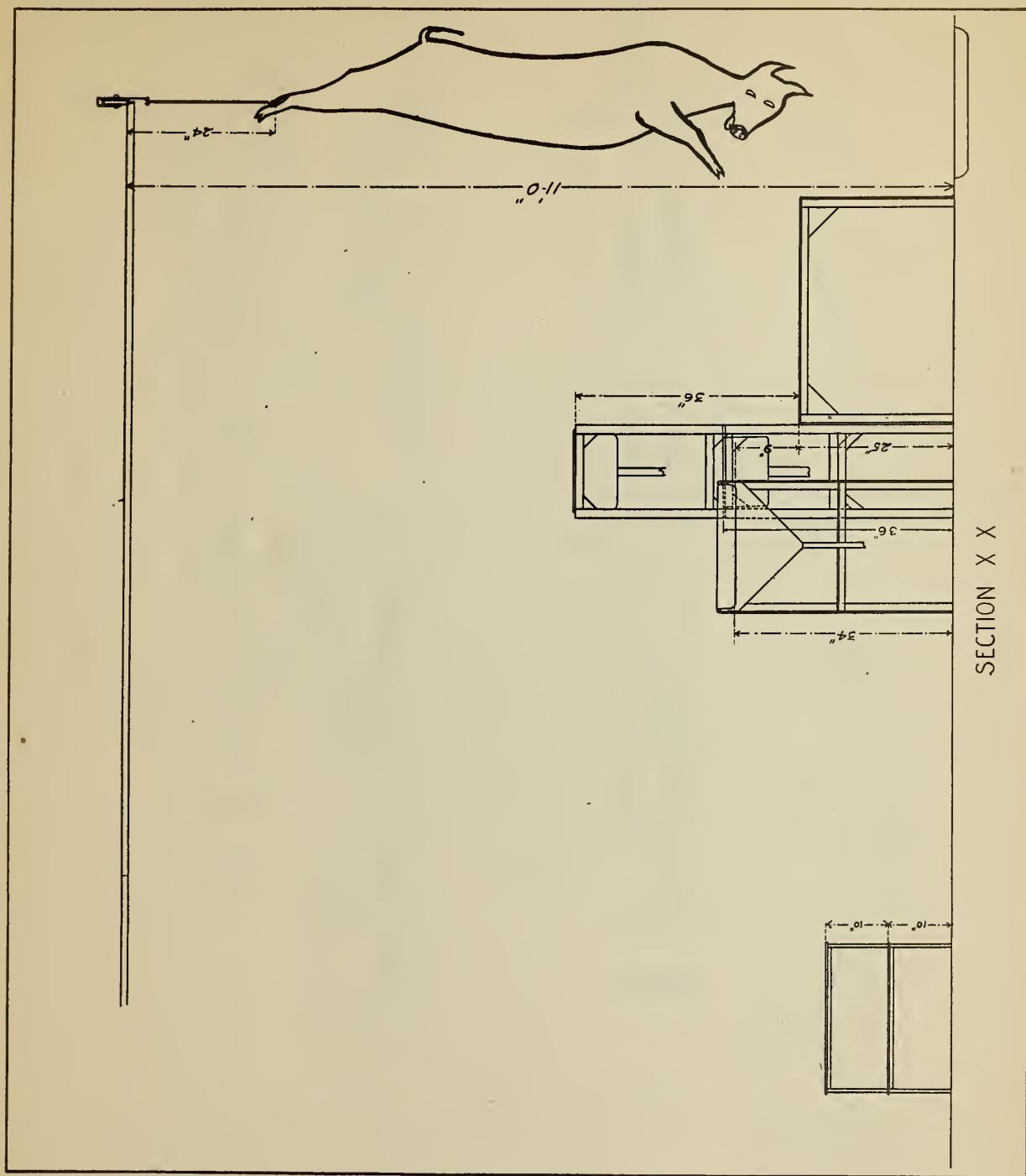


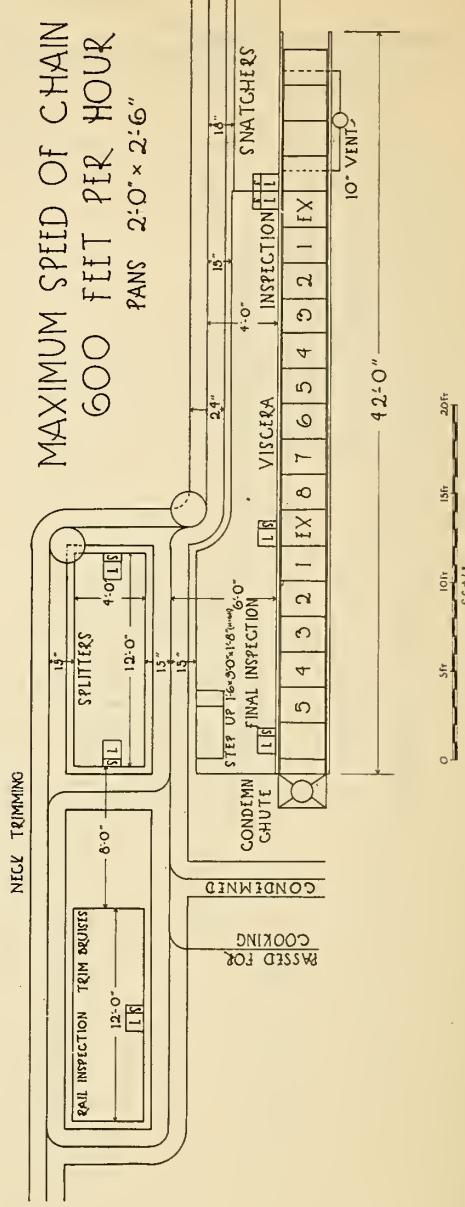
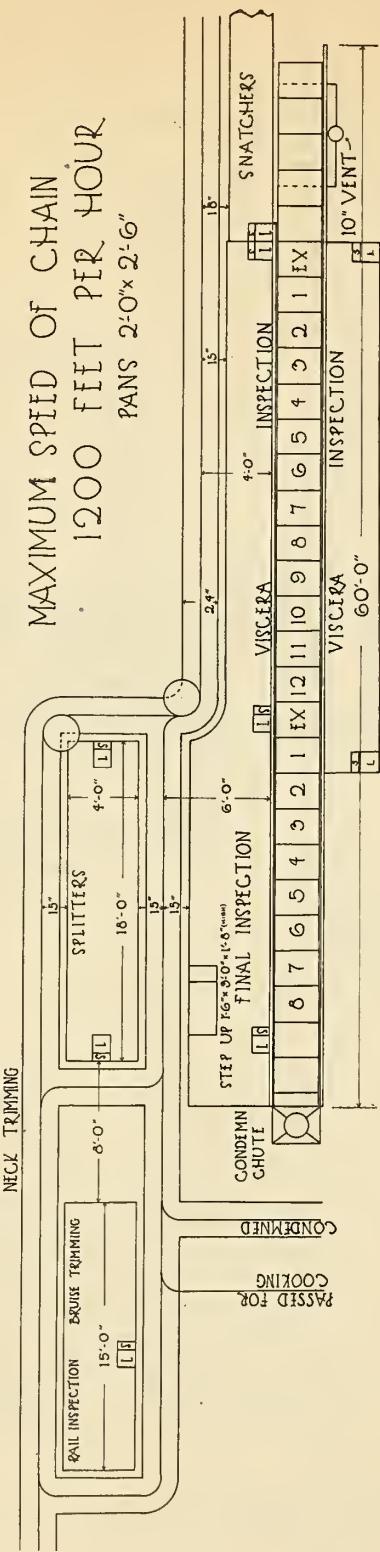
DRESSED SHEEP AND LAMB CARCASSES

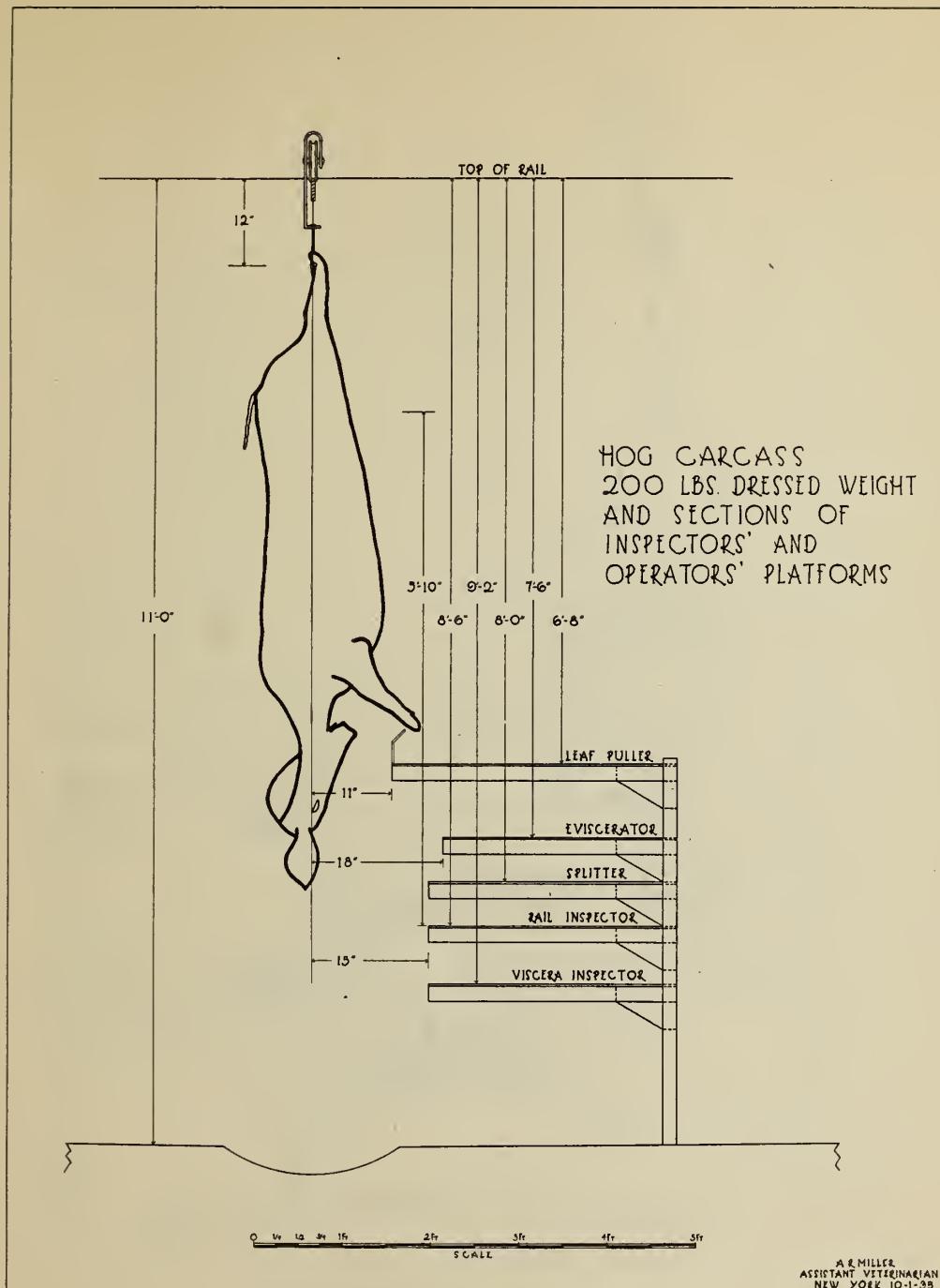
GEO. SCHWIMM
ASSISTANT VETERINARIAN
NEW YORK, N.Y.
APRIL 12, 1934.



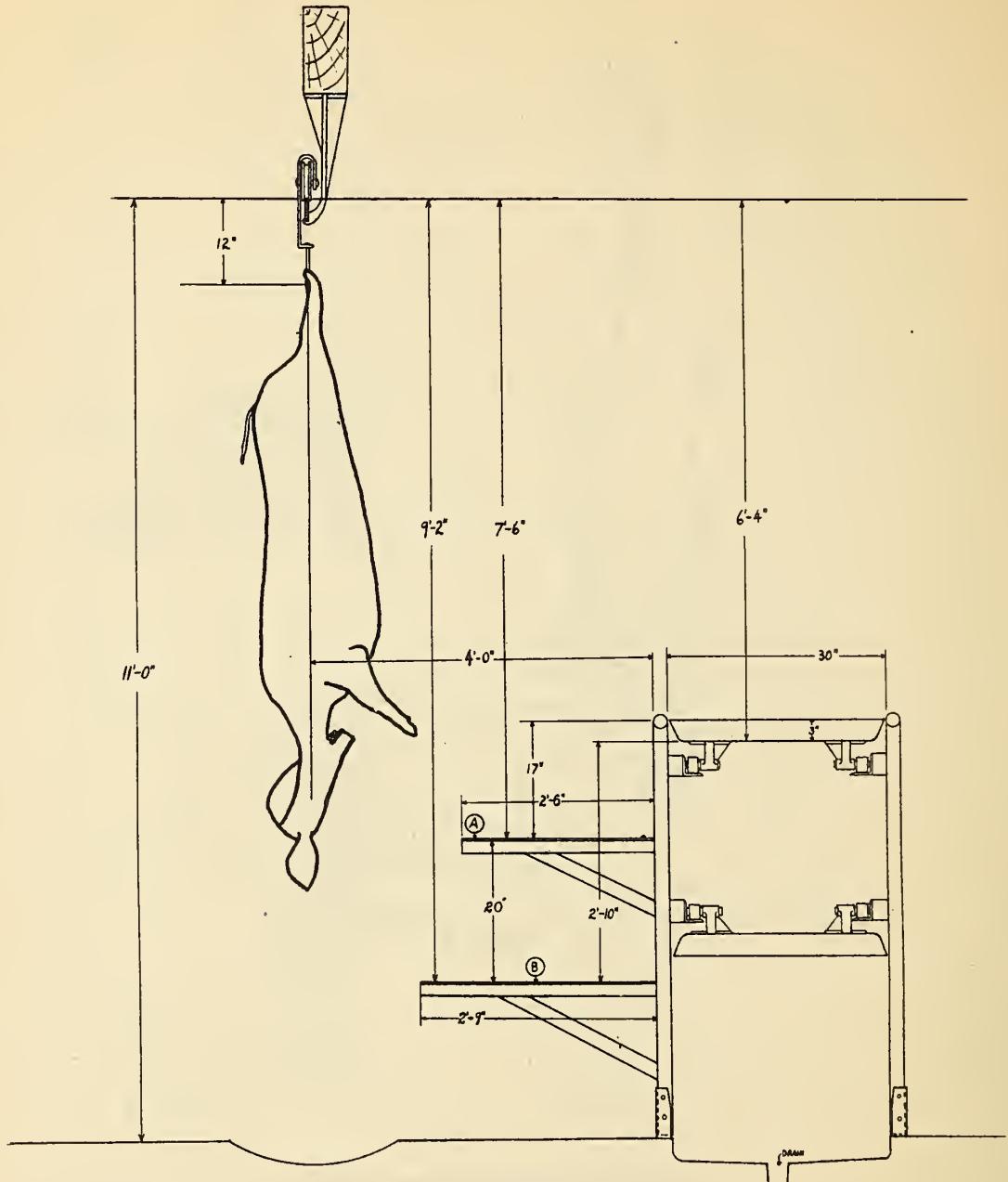
MRADIL
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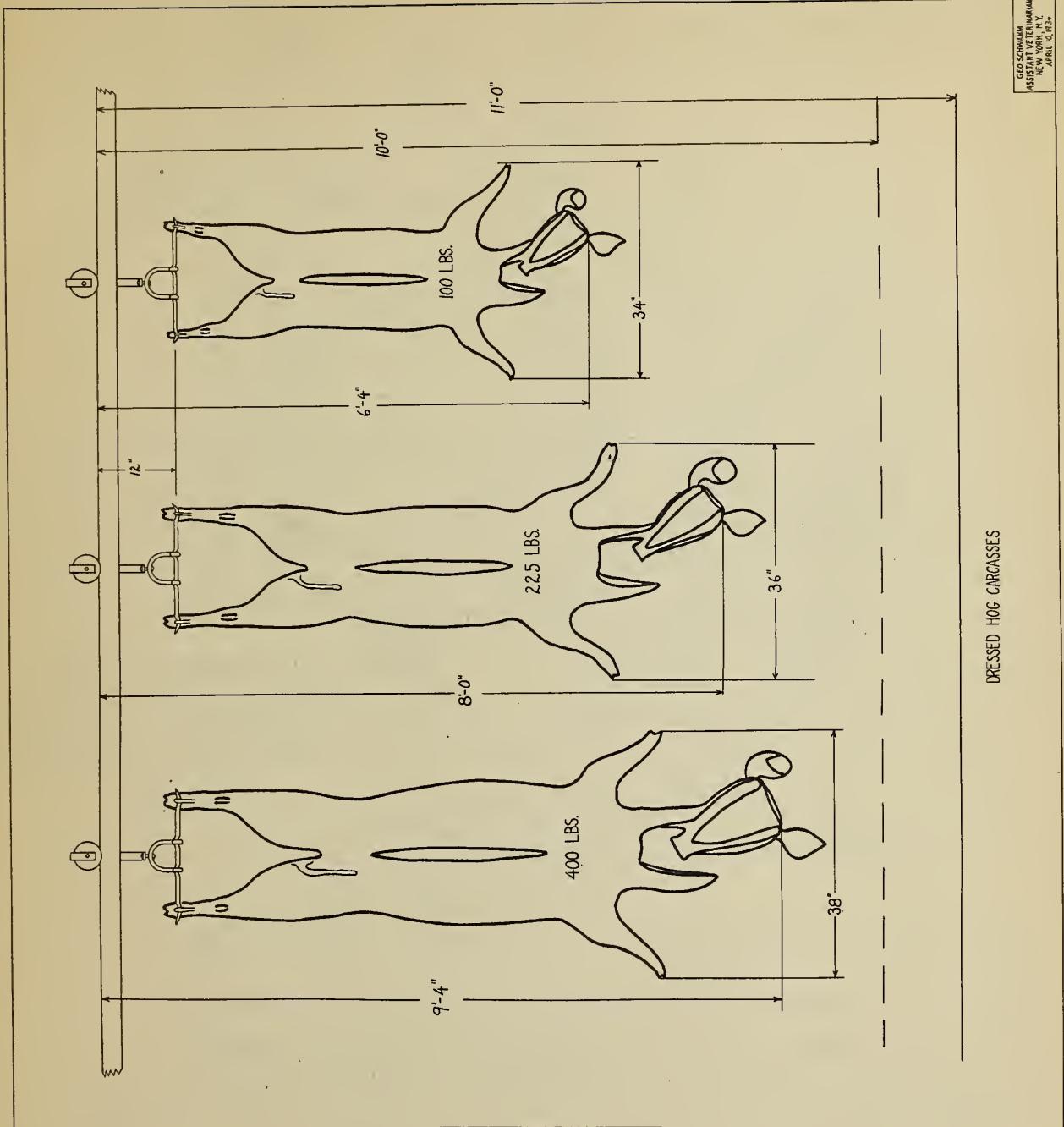




A. E. MILLER,
ASSISTANT VETERINARIAN
NEW YORK 10-1-38

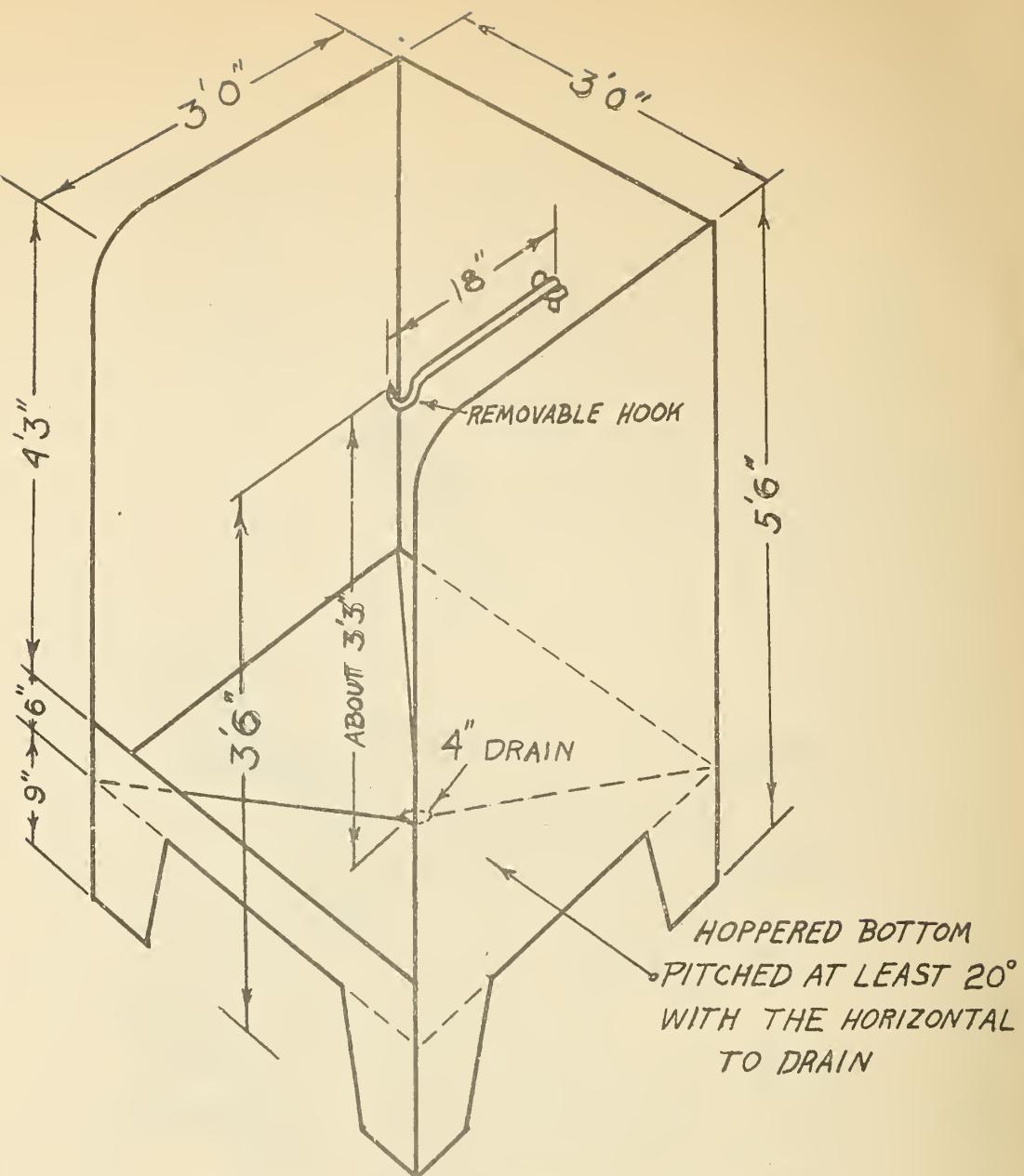


HOG CARCASS 200 LBS. DRESSED WEIGHT AND
SECTION OF MOVING-TOP VISCERA INSPECTION
TABLE. (A) EVISCERATOR'S PLATFORM
(B) INSPECTOR'S PLATFORM



DRESSED HOG CARCASSES

GEO SCHWALM
ASSISTANT VETERINARIAN
NEW YORK, N.Y.
APRIL 6, 1915



CATTLE HEAD FLUSHER & WASHER

DIRECTLY CONNECTED TO DRAINAGE SYSTEM THROUGH A DEEP SEAL TRAP. AREA IN WHICH EQUIPMENT IS LOCATED HAS SEPARATE DRAINAGE. DIMENSIONS OF FLUSHER USED ONLY FOR CALF HEADS MAY BE 2'0" x 2'0" IN PLAN.

